REMARKS / ARGUMENTS

Claims 74-84, and 94-96 are under consideration and are presently rejected. Claim 96 is cancelled.

Rejection under 35 U.S.C. 103

The Examiner has rejected the claims as being unpatentable over Lipford (Vaccine 1994 12(1) 73-80) in view of the teachings of Kensil (US 5583112). The Examiner explains that Lipford teaches an immunogenic composition comprising 5mg of cholesterol and 0.4mg of Quil A and that the ratio of cholesterol to Quil A is 12.5:1. The Examiner correctly points out that Lipford does not teach the use of purified QS21. Kensil, teaches that QS-21, a component of Quil-A, has immunogenic properties, and the Examiner suggests that it would be obvious to a person of ordinary skill in the art to substitute QS21, one of the purified saponins of Kensil, for the crude Quil A extract used in Lipford.

The present invention claims a ratio of QS21 to cholesterol not taught or disclosed in Lipford or Kensil. The Examiner has stated that the claimed ratio is obvious by routine optimization. Applicants respectfully traverse. Even if one accepts, for the sake of argument, that Lipford and Kensil are properly combined to make obvious the composition of QS21 and cholesterol, neither reference discloses the ratio of QS21 to cholesterol as claimed and there is nothing in Lipford or Kensil to indicate what the ratio of QS21 to cholesterol should be in the Examiner's proposed composition. Furthermore, the cited prior art references that disclose combinations of saponins and cholesterol are either focused on the use of cholesterol as a structural component of adjuvant compositions or do not teach the disclosed ratio.

Lipford and Kensil do not teach or suggest a ratio of purified QS21 to sterol. If a person of ordinary skill in the art were to attempt to combine the teachings of Lipford and Kensil, as the Examiner suggests, that person would be left to

formulate the composition based on guidance from other prior art references and on common understanding in the art. Applicants submit that at the time of filing there was no guidance in the prior art and no common understanding of the significance of the ratio of QS21 to cholesterol and its potential effects on potency and necrotic activity. As the prior art provides no clear direction, the Examiner and Applicants have had to argue over several possible QS21/sterol ratios that one of skill in the art might have devised for the Examiner's suggested combination. The argument over this point in the prosecution history underscores the fact that there is no teaching or compelling reason given in the prior art to motivate a person skilled in the art to formulate the Examiner's proposed composition with the ratio of QS21 to cholesterol as claimed by the Applicant. It is only with the aid of hindsight that one can arrive at the Applicants' claimed ratio.

Applicants have shown in the specification that the ratio of QS21 to sterol is critical. Excess cholesterol to QS21w/w inhibits necrosis induced by QS21 at the injection site, a surprising and beneficial effect unrecognized in the prior art. In light of the above argument, Applicants request that the Examiner withdraw the rejection and favourably reconsider the claims as presented.

The Commissioner is hereby authorized to charge any fees required or credit any overpayment to Deposit Account No. 07-1392.

Respectfully submitted,

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